



FEDERAL - STATE COOPERATIVE
SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for

**Montana and Northern Wyoming
Upper Missouri, Upper Columbia and
Yellowstone Rivers**

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Montana Agricultural Experiment Station

In cooperation with the U. S. Forest Service, U. S. Geological Survey, National Park Service, U. S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and local organizations.

As of
APR. 1, 1951

FEDERAL-STATE COOPERATIVE SNOW SURVEYS

AND

IRRIGATION WATER FORECASTS

FOR

MONTANA and NORTHERN WYOMING

Upper Missouri and Upper Columbia River
Basins

Report Prepared
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IRRIGATION WATER SUPPLY OUTLOOK
APRIL 1, 1951

The snow pack on the watersheds of both the Upper Missouri and Upper Columbia, in Montana, is VERY GOOD although the present prospects are for a smaller runoff than 1950 or 1949.

The snow pack on the Lower Yellowstone River in Northern Wyoming is above average, and the resulting runoff will probably be as large, or larger than 1950 or 1949. Valley precipitation in the Columbia Basin has been above average, while in the Missouri and Lower Yellowstone, the Valley precipitation is below average. Streamflow during the winter and spring months have generally been above average from the mountains. Water storage in reservoirs throughout the State of Montana, and Wyoming, is good for this time of year. All reservoirs should be filled by the end of the Snow Melt Season.

A POTENTIAL FLOOD HAZARD exists on the Upper Columbia and Northern part of the Missouri again this season. The magnitude of this Hazard is entirely dependent on sequence of meteorological events that occur during the Melt Season, April-July. There is more snow water in the mountains this year than in 1948, which was a disastrous year due to the occurrence of high temperatures and precipitation during the Melt Season. A duplication of the 1948 Melt Season would produce equally high water in the Upper Columbia and parts of the Missouri tributaries.

The release of this bulletin has been withheld until after the Annual Meeting of the Upper Missouri River Water Forecast Committee Meeting which was held on April 10 in Billings. Statements and forecasts are in agreement with the opinion of the committee.

JEFFERSON

The Jefferson Basin should produce a good water supply for irrigation uses this season. The snow pack at most of the courses is greater than 1950 or 1949.

MADISON

The snow pack on the Madison River is above average, but NOT as large as 1950 or 1949. Stream flow should be about 16 per cent above average.

GALLATIN

The Gallatin River Basin has a good water supply in storage in the snow and should produce about 107 per cent of average flow, which is not as large as 1950.

MISSOURI MAIN STEM

The flow in the Main Stem of the Missouri is largely affected by that of the Jefferson, Madison and Gallatin. However, the Northern tributaries from Three Forks down stream are all in good shape this season. The Sun River has approximately the same volume of flow as 1950 and 1949, as well as the Teton. The Marias is slightly below last year, but above average. POSSIBLE FLOOD DAMAGE along these three tributaries is a definite threat this season, depending largely on the rapidity of melt, and the addition of more water by precipitation. At Fort Benton, on the Missouri, the forecast for the period May through June is 2,025,000 acre feet; and, 1,050,000 acre feet for the period July through September. The May-September forecast being 3,075,000 acre feet. This volume, with the water already entering Fort Peck Reservoir since October 1, should result in a yearly volume of approximately 8,000,000 acre feet.

UPPER YELLOWSTONE

Snow cover on the Upper Yellowstone River Basin is GOOD this season. The snow survey courses in Yellowstone Park and nearby tributaries indicate an above average snow pack, ranging from 108 to 126 per cent of average. The seasonal stream flow from May through September should reach 1,770,000 acre feet.

LOWER YELLOWSTONE (WYOMING)

The snow pack on the Wind River is considerably above normal, and the stream flow from this basin should be above normal, reaching 670,000 acre feet between the months of April through September. This volume is 140 per cent of the average for this basin.

The Popo Agie River Basin is also well covered with an above normal snow pack; perhaps not as high as the Wind, but a very good season is expected.

The Big Horn River snow courses on the Owl Creek and Greybull Creek are above the short time average of 3 years that these courses have been established. At Sylvan Pass on the Shoshone, the course is 134 per cent above average. The flow below Buffalo Bill Reservoir, from April through September, should approximate 1,037,000 acre feet, or 130 per cent of the average flow for that season of the year.

COLUMBIA RIVER BASIN

The Columbia River Basin, as a whole, has been visited by many good storms this season, and the snow pack is again above the average at most of the snow survey courses. The snow pack is not as heavy as 1950 or 1949, but there exists a higher snow water equivalent than in 1948. Inasmuch as the Columbia Basin produced some damaging flood waters in 1948, we are prone to use that year as a measuring stick for other years. The FLOOD HAZARD lays largely in the rapidity of snow melt and, also, on the quantity of precipitation that may fall during the snow melt season. Both of these factors were high during 1948, but were exceptionally low during 1949 and 1950. With an above average snow water equivalent, we should watch the temperatures and precipitation volumes during April, May and June.

KOOTENAI RIVER

The Kootenai River, in Canada and the United States, is covered by an above average snow pack, and should produce and EXCELLENT water supply. The Flathead River Basin has a snow pack of about 20 per cent above normal, while the Clark Fork is averaging about 15 per cent above average. On the Pend Oreille River, the snow course at Hodoo Creek reached 135 inches of depth with 56.6 inches of water equivalent. This is perhaps the maximum of the snow depths in the Upper Columbia, in Montana. The Bitterroot River Basin, also, has a good snow pack this season that ranges from 11 per cent above normal to 38 per cent above normal.

Forecast volumes for the Missouri, Columbia and Lower Yellowstone Rivers, are tabulated on the following page, listed under the season and station selected for the best correlations available at this time.

APRIL 1, 1951

PRELIMINARY ESTIMATES OF RUNOFF OF REPRESENTATIVE
STREAM GAGE STATIONS IN MONTANA AND NORTHERN WYOMING

NAME OF STREAM AND STATION	May-June	July-Aug. Sept.	May-Sept.	Percent Average
<u>MISSOURI BASIN</u>				
	FORECAST IN ACRE FEET			
Gallatin River at Gateway	283,000	148,000	431,000	104
Madison River at West Yellowstone	101,000	76,000	177,000	116
Hyalite Creek at Ranger Station	20,400	11,200	31,600	102
No. Fk. Musselshell at Delphine	1,400	1,000	2,400	109
Judith River near Utica	22,570	8,600	30,580	82
Yellowstone River at Corwin Springs	1,050,000	720,000	1,770,000	107
Big Hole River at Melrose	567,200	223,400	790,600	138
Missouri River at Fort Benton	2,025,000	1,050,000	3,075,000	110
<u>LOWER YELLOWSTONE RIVER (WYOMING)</u>				
	April-June		April-Sept.	
No. Fk. Popo Agie River near Lander	47,500		60,960	111
Wind River at Riverton	352,300		670,000	140
Shoshone River below Buffalo Bill	574,800		1,037,000	130
Middle Fork Powder near Kaycee	66,430		75,150	102
Tongue River near Dayton	92,250		119,580	98
Tongue River at Acme	234,000		285,000	115
Goose Creek near Sheridan	48,210		58,470	85
<u>UPPER COLUMBIA RIVER BASIN</u>				
Bitterroot River at Darby	422,000		520,000	125
Clark Fork above Missoula	1,600,000		1,720,000	134
Clark Fork Below Missoula	2,700,000		3,140,000	132
Clark Fork at St. Regis	3,520,000		4,150,000	125
Flathead River at Columbia Falls	6,100,000		7,200,000	157
Flathead River at Polson	6,200,000		7,800,000	153
Clark Fork River at Plains	8,700,000		12,300,000	147
Clark Fork River at Heron	11,000,000		14,100,000	139

Note: Probable Error for these forecast is plus or minus 10 to 15% of the forecast value. Values of (r) range from 0.720 to 0.983.



Location										Location										
Drainage Basin and Course Name	Montana Number	Elev.	Sec. Lat.	Range Twp.	Long.	Record Began	Measuring Dates ^a	Measured By ^b		Drainage Basin and Course Name	Montana Number	Elev.	Sec. Lat.	Range Twp.	Long.	Record Began	Measuring Dates ^a	Measured By ^b		
MISSOURI RIVER DRAINAGE										MISSOURI RIVER DRAINAGE (Cont.)										
(ROCK-DEERHEAD)										BIG HORN RIVER WYO.										
Lakeview Ridge	11E3	7200	27	11S	2W	1918	3,4,5	9		Beavers Hill	9F5	6900	6	13N	102W	1918	2,3,4,5	Pd.Obs.		
Lakeview Canyon	11E4	6930	26	11S	2W	1917	3,4,5	9		Owl Creek	6F1	6700	30	13N	101W	1918	2,3,4,5	Pd.Obs.		
Lakeview	11E2	6950	15	5S	9W	1918	3,4	1		Lensleep R.S.	7E3	5300	30	19N	86W	1935	4,5	1		
White Pine Ridge	11E1	6550	16	11S	9W	1918	3,4	1		Timber Creek	9E2	6600	25	17N	103W	1918	4,5	1		
(ROCK-DEERHEAD)										Ranger Creek	7E1	6600	32	53N	85W	1935	4,5	1		
Lakeview Dick	13D10	7000	12	6S	10W	1918	3,4	1		Wood River	9F7	8000	28	16N	103W	1939	2,3,4,5	1		
Gold Stone	13D9	8100	11	6S	10W	1918	3,4	1		(SANDHOLE RIVER) WYO.										
Lakeview Pass	13E1	7400	9	10S	15W	1918	3,4	1		East Entrance	10E0	7000	17	52N	109W	1918	1,2,3,4,5	5		
Correll Creek	13D12	6650	14	9S	15W	1918	3,4	1		Sylvan Pass	10E5	7100	12	52N	110W	1936	1,2,3,4,5	5		
Paul Creek	13E2	7090	15	10S	15W	1918	3,4	1		TONGUE RIVER WYO.										
Salmon Junction	13D11	6800	27	6S	15W	1918	3,4	1		Big Goose	7E2	7700	1	53N	86W	1935	4,5	1		
(BIG HOLE)										POWDER RIVER WYO.										
Big Hole Pass	13D3	7440	28	3S	16W	1918	3,4	1		Red Fork	7E1	7000	18	13N	85W	1936	4,5	Pd.Obs.		
Big Hole Pass(Below)	13D1	6900	24	3S	16W	1918	3,4	1		Sour Dough	6E1	8500	17	19N	81W	1936	4,5	1		
East Boundary	13D5	6700	22	3S	17W	1918	3,4	1		COLUMBIA RIVER BASIN										
Ribbons Pass	13D2	7100	4	2S	19W	1931	2,3,4,5	1,2		Baree Mountain	15B1	6000	1	25N	31W	1937	4,5	1		
Jake Lake Creek	13D8	7310	25	7S	16W	1918	3,4	1		Blue Bird Basin	11A1	6800	24	37N	26W	1937	4,5	1		
Miner Forks	13D6	7300	24	6S	17W	1918	3,4	1		Brush Creek	11A4	5000	13	30N	18W	1911	3,4	1		
Miner Lake	13D7	6720	10	6S	16W	1915	3,4,5	1		Red Mountain	15A1	6000	4	30N	29W	1937	3,4,5	1		
(WISE RIVER)										FLATHEAD RIVER										
Anderson Mdw.	13D14	7000	18	3S	12W	1918	3,4	1		Big Creek	13B3	6750	627	22N	18W	1911	4,5	1		
Elk Horn	13D15	8150	15	1S	12W	1931	3,4,5	2		Brush Creek	11A1	5000	13	30N	26W	1937	3,4	1		
Wise River	13D13	6300	15	2S	12W	1918	3,4	1		Cattle Queen	13A1	1700	7	35N	17W	1939	3,4	5		
(RUBY RIVER)										Desert Mountain	13A2	5600	24	31N	19W	1937	1,2,3,4,5	1		
Cottonwood	11E2	5900	24	10S	3W	1918	3,4	1		Elk Mountain	13B4	6750	1	20N	19W	1911	3,4	1		
Cottonwood (Upper)	11E1	8100	30	10S	2W	1918	3,4	1		Goat Mountain	12B7	7000	20	22N	10W	1931	3,4	2		
Flashlight	12D3	6950	22	8S	7W	1915	3,4,5	1		Hell Roaring Divide	11A3	5770	35	32N	22W	1912	4,5	1		
Potomac Root	12D2	6900	13	1S	3W	1918	3,4	1		Kishenehn	11A2	1300	7	37N	21W	1916	4,5	5		
Vigilante	11D1	6125	28	9S	3W	1918	3,4	1		Limestone Pass	13B8	7000	34	17N	15W	1918	3,4	1		
MADISON RIVER										Logan Creek	11A5	1300	34	30N	21W	1937	3,4	1		
Webster	11E5	6550	22	11S	3E	1934	1,2,3,4,5	2		Marias Pass	13A5	5250	34	30N	11W	1931	1,2,3,4,5	2		
West Yellowstone	11E7	6700	34	13S	5E	1934	1,2,3,4,5	2		North Fork Jocko	13B7	6330	3	17N	17W	1911	3,4	1		
Norris Basin	10E2	7500	14, 15, 16	110°-12'		1935	3,4	5, 6		Rainy Lake	13B6	1300	11	18N	16W	1917	3,4,5	1		
GALLATIN RIVER										Snow Lab. # 16	13A9	5200	15	29N	11W	1916	1,2,3,4,5	2		
Devil's Slide	10D1	8100	14	5S	6E	1935	3,4,5	2, 6		Spotted Bear Mt.	13E2	7000	23	25N	15W	1918	3,4	1		
Hood Meadow	10D3	6000	22	1S	6E	1931	3,4,5	2, 6		Strawberry Lake	13B10	6500	11	28N	19W	1918	3,4	1		
Mystic Lake	10D2	6000	30	3S	7E	1935	2,3,4	6, 7		Trinkus Lake	13B1	6500	9	25N	17W	1918	3,4	1		
New World	10D1	6700	24	3S	6E	1939	2,3,4,5	0, 7		Trout Lake	13B11	3600	21	28N	17W	1918	3,4	1		
21-Mile	11E6	7150	1	11S	5E	1934	1,2,3,4,5	2		Upper Holland Lake	13B5	7000	28	20N	16W	1918	3,4	1		
MISSOURI RIVER MAIN STEM										UPPER CLARK FORK										
Chessmen Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	2		Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	2		
Crystal Lake	9C1	6100	24	12N	17E	1911	3,4	1		East Fork Ranger Stn	13D1	5100	16	2N	17W	1937	4	1		
Grasshopper	10C2	7000	19	9N	8E	1938	3,4	1		El Dorado Mine	13C9	7800	23	8N	12W	1916	4	11		
Kings Hill	10C1	7950	35	13N	7E	1937	3,4,5	2		Gold Creek Lake	13C8	7200	14	8N	12W	1916	4	11		
Picnic Grounds	12C6	6500	22	5N	6W	1910	2,3,4	3		Intergaard	13C4	6150	6	5N	13W	1939	2,3,4	3		
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,4,5	1		North Fork Jocko	13B7	6330	3	17N	17W	1911	3,4	1		
Stemple Pass	12C1	6900	10	13N	7W	1934	3,4,5	2		Picnic Grounds	12C6	6500	22	5N	6W	1910	2,3,4	3		
Tennile Creek, Lower	12C2	6250	13	8N	6W	1935	1,2,3,4,5	2		Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,4,5	1		
Tennile Creek, Middle	12C3	6800	13	8N	6W	1934	1,2,3,4,5	2		Rainy Lake	13B6	1300	11	16N	16W	1917	3,4,5	1		
Tennile Creek, Upper	12C4	8000	19	8N	5W	1935	1,2,3,4,5	2		Skalkaho Summit	13C3	7250	30	6N	17W	1937	4	1		
(TENNILE RIVER)										Slide Rock Mountain	13C2	7100	26	10N	16W	1937	4	1		
Fright Creek	12A1	6000	13	26N	10W	1918	3,4	1		Southern Cross	13C5	6500	9	5N	13W	1939	2,3,4	3		
Waldron Creek	12B2	5000	10	25N	9W	1918	3,4	1		Stemple Pass	13C1	6900	16	13N	7W	1934	3,4,5	2		
West Fork	12B1	6000	6	25N	9W	1918	3,4	1		Storm Lake No. 2	12C7	7780	19	1N	13W	1939	4	1		
(SUN RIVER)										Stuart Mill	13C6	6500	19	5N	13W	1939	2,3,4	3		
Bench Mark	12B8	5500	9	20N	10W	1918	3,4	1		Stuart Mountain #1	13C1	7100	6	11N	18W	1936	4	1		
Cabin Creek	12B0	5400	33	23N	10W	1919	3,4	1		Tennile Creek, Lower	12C2	6250	13	8N	6W	1935	1,2,3,4,5	2		
5-Bull	12B9	5000	30	20N	10W	1918	3,4	1		Tennile Creek, Middle	12C3	6800	13	8N	6W	1935	1,2,3,4,5	2		
Gates Park	12B5	5300	31	21W	10W	1919	3,4	1		Tennile Creek, Upper	12C4	8000	19	8N	5W	1935	1,2,3,4,5	2		
Goat Mountain	12B7	7000	20	22N	10W	1931	3,4	2		PEND OREILLE RIVER										
My Lake	13B9	7300	21	23N	12W	1950	3,4	1		Baree Mountain	13B1	6000	1	25N	31W	1937	4,5	1		
Wrong Creek Ridge	12B3	6800	17	25N	10W	1919	3,4	1		Freezeout Summit	15C3	7000	21	15N	27W	1937	4	1		
Wrong Creek	12B4	5700	32	25N	10W	1919	3,4	1		Hoodoo Creek	13C1	6200	9, 16	14N	27W	1937	4	1		
(MARIAS RIVER)										BITTERROOT RIVER										
Marias Pass	13A5	5250	34	30N	11W	1936	1,2,3,4,5	2		East Fork R. S.	13D1	5100	10	2N	17W	1937	4	1		
Snow Lab. #10	13A9	5200	15	29N	11W	1917	1,2,3,4,5	2		Gibbons Pass	13D2	7100	4	2S	19W	1934	2,3,4,5	1		
(MILK RIVER)										Mud Creek Pasture	11C1	1500	24	11N	21W	1937	3	1		
Rocky Boy	9A1	5200	15	28N	10E	1911	3,4	7		Nezperce Camp	11D2	5580	19, 20	1S	23W	1937	4	1		
(MUSSELSHELL RIVER)										Nezperce Pass	11D1	6575	32	28N	16E	1937	4	1		
Grasshopper	10C3	7000	19	9N	8E	1938	3,4	1		Skalkaho Summit	13C3	7250	30	6N	17W	1937	4	1		
UPPER YELLOWSTONE										Stuart Mountain #1	13C1	7100	6	11N	18W	1936	4	1		
Camp Senia	9D1	7890	2	6S	18E	1937	4	1		ST. MARY RIVER										
Canyon	10E3	7750	14, 15	110°-30'		1938	1,2,3,4,5	Pd.Obs.		Saskatchewan River Basin										
Cooke City	10D7	7400	25	9S	11E	1937	1,2,3,4,5	5												

SUPPLEMENTAL INDEX LIST OF SNOW SURVEY COURSES
IN ADJACENT BASINS, USED IN THIS REPORT AND
SHOWN ON THE INDEX MAP

DRAINAGE AND SNOW COURSE	Adj. State No.	Montana Number	Elev. Feet	Section Lat.	Twp	Range Long.	Record Began	Measurement Dates	Meas- ured By
JEFFERSON									
	Idaho								
Kilgore	10	11E12	6200	6	12N	39E	1937	1,2,3,4,5	pd.obs.
Blue Ridge Mine	5	11E11	6700	27	13N	38E	1938	4	pd.obs.
Camp Creek	6	12E3	6800	21	13N	36E	1936	1,2,3,4	1
Moose Creek	8	13D16	6200	22-27	27N	21E	1937	3,4,5	1
Big Springs	3	11E9	6500	34	19N	44E	1936	1,2,3,4,5	10
Island Park	9	11E10	3600	28	13N	43E	1936	1,2,3,4,5	10
Valley View	17	11E8	6500	7	15N	44E	1936	1,2,3,4	10
UPPER YELLOWSTONE Wyo.									
Lewis Lake Div.	9	10E9	7900	44-13		110-40	1919	1,2,3,4	10
Aster Creek	2	10E8	7700	44-17		110-37	1919	1,2,3,4	10
Tom Thumb Summit		10E7	7900	44-22		110-35	1949	3,4	10
LOWER YELLOWSTONE Wyo.									
(Wind River)									
Togwotee Pass	12	10F1	9600	29	44N	110W	1936	2,3,4,5	10
Kendall	25	9F12	7900	23	38N	110W	1936	3,4,5	1
Loomis Park	26	10F4	8500	14	37N	111W	1942	3,4,5	1
Yellow Jacket	14	10F5	6775	33	42N	112W	1936	3,4,5	1
Black Rock	2	10F3	8600	4	44N	111W	1936	2, 4	10
Dutch Joe	23	9G6	8700	32	31N	104W	1936	4,5	1
Mulligan Park	24	9G5	8900	17	35N	108W	1936	3,4,5	1
KOOTENAI									
	Idaho								
Smith Creek	13	16A1	4800	29	64N	3W	1937	4,5	1
	Canada								
Fernie	10		3500	49-31		115-01	1939		
New Fernie	10A		4100						
Gray Creek	34		5100	39-37		116-41	1948		
Marble Canyon	32		5000	51-12		116-09	1947		
Nelson Creek	19		3050	44-25		117-14	1938		
Sinclair Pass	3A		4500	50-40		115-58	1947		
Sullivan Mine	20A		5100	49-43		116-01	1945		
Upper Elk River	41		4400	50-01		114-56	1947		
Kimberly	20		3800	49-41		115-59	1945		
UPPER CLARK FORK Idaho									
49 Meadows	1	15B10	5000	6	43N	5E	1937	1,2,3,4,5	1
Lookout	10	15B2	5250	4	47N	6E	1921	1,2,3,4,5	1
Above Roland	2	15B7	4350	35	47N	6E	1926	3	12*
Below Roland	3	15B6	3770	34	47N	6E	1926	3	12
Sunset	16	15B9	5600	28	49N	5E	1921	3	12
PEND OREILLE Idaho									
Mosquito Ridge	9	16A4	5110	5	54N	2E	1937	4,5	1
Freezeout #2		15B10	6800	21	15N	27W	1951	3,4	1

SUPPLEMENTAL INDEX LIST OF SNOW SURVEY COURSES
IN ADJACENT BASINS, USED IN THIS REPORT AND
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DRAINAGE AND SNOW COURSE	Adj. State No.	Montana Number	Elev. Feet	Section Lat.	Twp	Range Long.	Record Began	Measurement Dates	Meas- ured By
<u>BITTERROOT</u>	Idaho								
Moose Creek	8	13D16	6200	22-27	27N	21N	1937	3,4,5	1
Kit Carson	3	14D3	4700	4	27N	16E	1937	4	1
Savage Pass	7	14C4	6000	18	36N	15E	1937	4	1
Powell Pasture	6	15C3	3700	27	27N	14E	1937	4	1
Packers Mdw.	5	14C2	5700	15	38N	15E	1937	2,3,4,5	1
<u>FLATHEAD</u>									
Basin Creek		13-B-14	5000	11	19N	12W	1951	2,3,4,5	1
Holbrook		13-B-13	4530	18	21N	13W	1951	2,3,4,5	1
Trout Lake #2		13-A-12	3600	21	28N	17W	1951	2,3,4,5	1
Twin Creeks		13-B-11	3580	14	26N	16W	1951	2,3,4,5	1
Quintonkon		13-A-13	3800	11	26N	17W	1951	2,3,4,5	1
<u>TONGUE RIVER</u>									
Burgess Ranger Sta.		7-E-4	7900	36	56N	89W	1950	3,4,5	Pd.Obs.
Dome Lake		7-E-5	8800	11	53N	87W	1950	3,4,5	Pd.Obs.
<u>POWDER RIVER</u>									
Soldier Park		7-E-6	8700	36	51N	85W	1950	3,4,5	Pd.Obs.
Muddy Pass		7-R-7	9700	11	48N	85W	1950	3,4,5	Pd.Obs.
North Powder		7-E-8	8500	5	47N	85W	1951	3,4,5	Pd.Obs.

*Washington Water Power Company

STORAGE IN RESERVOIRS OF MONTANA AND NORTHERN WYOMING
Reservoir Volumes in 1,000's of Acre Feet

Reservoir	Location on or Diversion from	Usable Capacity	Contents This Year April 1 1951	Contents Last Year April 1 1950	April 1 10-Year Average 1940-49
Lake Sewall	Missouri	37.8	21.0	24.0	
Hauser Lake	Missouri	52.1	35.7	27.7	41.8
Holter Reservoir	Missouri	81.9	74.4	30.8	53.6
Fort Peck Res.	Missouri	19,000.0	12,960.0	11,240.0	9814.3
Ruby Reservoir	Ruby	38.5			
Hebgen Reservoir	Madison River	345.0	232.4	216.6	321.2
Madison Reservoir	Madison River	41.0	36.0	35.4	33.8
Smith River Res.	Smith River	10.7			
Gibson Reservoir	N.Fk. Sun River	105.0	80.6	46.6	65.7
Willow Creek	N.Fk.Sun-Willow Cr.	32.3	26.0	3.8	13.7
Pishkun Reservoir	N.Fk. Sun River	32.0	18.9	18.8	15.5
Lower Two Medicine L.	Two Medicine River	14.0			
Four Horns Res.	Badger Creek	20.0		6.0	8.1
Birch Creek Res.	Birch Creek	30.0	30.0	21.3	22.6
Lake Francis Res.	Birch Creek	112.0	96.5	83.3	77.6
Askley Lake	Judith River	5.8		4.4	4.3
Durand Reservoir	N.Fk. Musselshell	7.0	6.1	6.4	
Dead Man Basin	Musselshell River	52.5			
Martinsdale Res.	S.Fk. Musselshell	23.1	12.1	11.0	9.4
Fresno Reservoir	Milk River	127.2	99.9	17.7	61.2
Nelson Reservoir	Milk Reservoir	66.8		5.7	31.7
Mystic Lake	W.Rosebud Creek	20.8	5.2	4.3	5.7
Cooney Reservoir	Red Lodge Creek	27.5	14.1	14.1	10.9
Tongue Reservoir	Tongue River	73.9	9.0	13.9	13.7
Sherburne Lake Res.	Swiftcurrent Creek	66.1		38.0	21.1
Lake Helena	Missouri River	10.4	3.2	1.1	
YELLOWSTONE RIVER BASIN (Wyoming)					
Buffalo Bill	Shoshone	456.6	269.1	169.4	333.8
Pilot Butte	Wind River	30.1	13.8	13.7	15.0
Bull Lake	Wind River	155.0	79.5		57.6
COLUMBIA RIVER BASIN (Montana)					
Georgetown Lake	Flint Creek	31.0	19.9	18.4	22.6
E.Fk.Rock Cr.Res.	E.Fk. Rock Creek	16.0			
W.Fk.Bitterroot Res.	E.Fk. Bitterroot	31.7	10.0	3.5	7.8
Como Lake	Rock Creek	34.8			
Flathead Lake (Sommers)	Flathead River	1,791.0	651.6	614.1	319.4
*Little Bitterroot	Little Bitterroot	37.1	35.7	29.0	9.8
*Dry Fork Reservoirs	Dry Fork Creek	6.7	5.1	4.9	2.5
**Mission Valley 9 Reservoirs	Mission Valley (Flathead River)	105.0	52.5	31.8	39.3

*Comprised of two reservoirs on Little Bitterroot River.

*Comprised of two reservoirs on Dry Fork Creek.

**Comprises nine small reservoirs on Mission Valley Indian Irrigation Service Project.



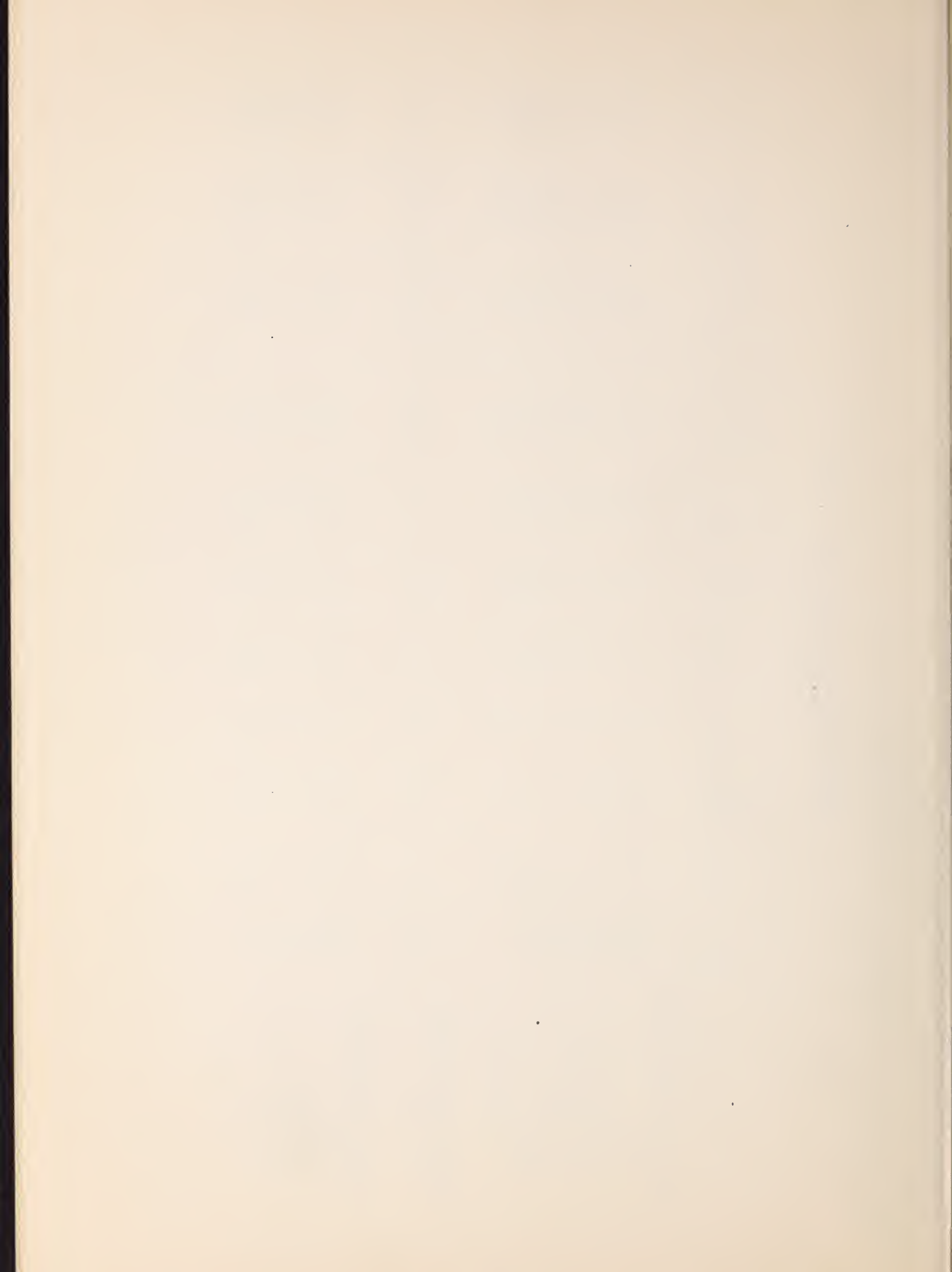
PRECIPITATION DATA FOR APRIL 1, 1951
MONTANA

Station	Elev- ation	1950				1951			Mar. Dept. from Normal	Seasonal Accumulation		
		Precipitation				Precipitation				Precipitation		
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	1950-51		Normal	Departure	
WEST OF DIVIDE												
Butte (Airport)	5533	0.53	1.20	0.59	0.92	0.82	1.01	+0.37	5.07	3.13	+1.94	
Phillipsburg	5280	0.51	1.25	0.64	1.43	1.45	1.85	+0.87	7.13	5.03	+7.13	
Hamilton	3529	1.78	1.58	0.71	1.21	1.52	1.89			4.66		
West Glacier	3154	5.87	2.35	5.17	4.77	4.88	3.66	+0.23	24.93	15.11	+9.82	
Summit (Marías)	5213	7.53	6.13	5.83	5.37	6.52	3.66	+0.38	35.09	17.54	+17.55	
Ovando 1 SW	4101	1.02	2.38	1.63	1.53	1.72	1.12	-0.14	9.40	8.71	+0.69	
Trout Creek	2485	6.36	3.95	4.67	5.42	6.51	1.96	-1.09	28.87	19.77	+9.10	
Thompson Falls	2435	4.36	2.79	2.25	2.97	3.44	1.91		17.11	11.57	+6.72	
Average (8)		3.50	2.70	2.69	2.95	3.36	1.91	+0.10		10.39		
CENTRAL DIVISION												
Babb	4300	1.04	1.23	0.85	0.65	1.79	0.54	+0.03	2.31	5.98	-1.32	
Havre	2488	0.24	0.41	0.32	0.39	0.42	1.22	+0.36	4.77	3.63	+0.54	
Great Falls (Airport)	3664	0.03	1.19	0.58	0.41	1.34	0.84	+0.05	3.99	4.23	+0.72	
Helena (Airport)	3893	0.43	1.50	0.61	0.38	0.24	0.61	-0.42	3.60	3.30	+0.30	
Lewistown (Airport)	4132	0.74	0.83	1.05	0.17	0.20	1.45	+0.59	5.03	4.51	+0.52	
Livingston	4485	0.94	1.05	0.81	0.38	0.40	0.53	-0.29	4.86	4.57	+0.29	
Wisdom	6058	1.06	1.15	0.48	0.71	0.93	2.18	-0.04	12.99	12.72	+0.27	
West Yellowstone	6669	2.88	1.79	1.95	2.28	1.91	3.50	+1.45	10.00	8.73	+5.27	
Mystic Lake	6558	0.86	2.37	1.08	2.02	0.17	1.36	-1.57	6.63	5.66	+0.97	
Average (9)		0.91	1.28	0.85	0.82	0.82						
EASTERN DIVISION												
Malta	2255	0.39	0.18	0.35	0.49	0.52	0.53	-0.01	2.46	2.98	-0.52	
Fort Peck	2180	0.24	0.25	0.23	0.48	0.39				2.65		
Medicine Lake	1962	0.50	0.10	0.21	0.36	0.49	0.25	-0.16	1.91	2.40	-0.49	
Circle	2428	0.54	0.18	0.13	0.33	0.50	0.05	-0.95	1.73	4.45	-2.72	
Billings	3139	0.83	0.88	0.68	0.70	0.38	0.69	-0.15	4.14	4.44	-0.30	
Miles City	2392	0.40	0.52	0.31	0.08	0.27	0.14	-0.72	1.72	4.11	-2.39	
Glendive	2076	0.45	EO.16	0.07	0.37	0.42	0.12	-0.72	1.59	3.59	-2.00	
Broadus	3026	0.46	0.41	0.40	0.48	0.31	0.60	-0.12	2.66	3.76	-1.10	
Average (8)		0.48	0.34	0.30	0.41	0.41	0.34	-0.66	2.27	3.55	-1.28	



PRECIPITATION DATA FOR APRIL 1, 1951
NORTHERN WYOMING

Station	Elev- ation	1950				1951			Mar. Dept. from Normal	Seasonal Accumulation			
		Precipitation				Precipitation				Precipitation			
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	1950-51		Normal	Departure		
BIG HORN RIVER BASIN													
Cody	4984	.08	1.29	.28	.77	0.09	0.58	+0.08		3.00	2.62	+0.38	
Lovell	3825	.02	.32	.03	.09	T	0.10	-0.25		0.56	2.19	-1.63	
Worland	4061	T	.10	.40	T	0.10	0.30	-0.11		0.96	2.34	-1.44	
Sunshine 4 SW	6930	.17	1.04	.29	.37	0.67	0.29	-0.94		2.83	5.19	-2.36	
Thermopolis	4336	.19	.80	.21	.07	0.18	0.09	-0.83		1.43	3.86	-2.43	
Riverton	4954	.22	.57	.00	.05	0.31	0.45	-0.04		1.34	2.75	-1.41	
Dubois	6917	.37	.71	T	.16	0.45	0.80	+0.26		2.17	2.98	-0.81	
Average (7)		.15	.68	.17	.22	0.25	0.37	-0.26		1.75	5.05	-3.30	
TONGUE RIVER BASIN													
Sheridan	4021	.51	1.05	.58	.55	0.24	1.20	+0.04		4.13	5.05	-0.92	
POWDER RIVER BASIN													
Arvada	3680	.22	.31	.06	.16	0.18	0.81	+0.04		1.74	3.61	-1.87	
Metz Ranch	5280	.37	.67	.19	.46	0.38	0.43	-0.39		2.50	3.46	-0.96	
Gillette	4542	.63	.72	.05	.50	0.25	1.30	+0.30		3.45	4.46	-1.01	
Nine Mile Creek	5000	.70	.40	.05	.20	0.50	0.30	-0.45		2.15	3.08	-0.93	
Mid West	4850	.83	.47	.28	.23	0.27	0.45	-0.69		2.53	4.47	-1.94	
Average (5)		.55	.51	.31	.34	0.32	0.66	-0.24		2.47	3.82	-1.35	



MONTANA SNOW SURVEYS APRIL 1, 1951

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE **												Ground Surface Condition
No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Apr. 1 1951	Past Records		Average Data April 1		Years of Record			
					1950	1949	Avg.	%Avg.				
JEFFERSON RIVER (Rock-Beaverhead)												
Lakeview Ridge	11E3	7400	Apr. 2	36.3	10.1	11.6	10.0	10.4	98	4		
Lakeview Canyon	11E4	6930	Apr. 2	43.7	11.3	10.3	12.7	11.4	99	4		
Limekiln	11E2	6950	Mar. 8	NO	SNOW	0.8	4.1	7.7	--	4	G.N.F.	
White Pine Ridge	11E1	8850	Mar. 8	21.2	4.4	7.2	7.2	7.4	59	4	G.N.F.	
*Kilgore	11E12	6200	Mar. 29	30.0	8.6	15.5	11.0	10.7	81	15		
*Camp Creek	12E3	6800	Mar. 30	29.0	8.3	13.9	10.7	8.9	94	16		
*Blue Ledge Mine (Horse Prairie)	11E11	6700	Mar. 29	44.0	14.9	26.1	16.7	15.7	95	14		
Bloody Dick	13D10	7600	Mar. 13	50.4	15.4	11.6	15.2	12.3	125	4	G.N.F.	
Gold Stone	13D9	8100	Mar. 13	61.2	20.5	15.2	19.0	15.7	130	4	G.N.F.	
Lemhi Pass	13E1	7400	Mar. 9	46.6	12.5	9.5	11.8	10.8	116	4	G.N.F.	
Terrell Creek	13D12	6650	Mar. 10	28.4	6.8	3.0	6.0	4.2	160	4	G.N.F.	
Trail Creek	13E2	7090	Mar. 9	42.0	10.8	7.4	10.4	9.8	110	4	G.N.F.	
Selway Junction (Big Hole)	13D11	6500	Mar. 10	42.3	11.6	7.5	12.8	9.8	119	4	G.N.F.	
Big Hole Pass	13D3	7440	Mar. 14	61.2	21.1	18.2	24.5	19.7	107	4	G.N.F.	
Big Hole Pass (Below)	13D4	6900	Mar. 14	51.4	17.6	15.4	19.6	16.2	109	4	G.N.F.	
East Boundary	13D5	6700	Mar. 14	35.9	12.5	8.8	11.8	10.2	122	4	G.N.F.	
Jahnke Creek	13D8	7340	Mar. 13	47.4	14.0	10.8	14.4	12.1	196	4	G.N.F.	
Miner Forks	13D6	7300	Mar. 12	53.2	17.3	11.4	13.8	13.2	131	4	G.N.F.	
Miner Lake (Wise River)	13D7	6720	Mar. 12	37.3	10.2	7.6	10.6	8.4	122	7	G.N.F.	
Anderson Meadow	13D14	7000	Mar. 16	35.8	10.0	8.3	10.6	6.4	157	4	G.N.F.	
Elk Horn	13D15	8450	Mar. 31	41.9	12.7	10.0	13.6	9.2	138	13	G.N.F.	
Wise River (Ruby River)	13D13	6300	Mar. 16	23.8	5.6	5.2	7.4	5.8	98	4	G.N.F.	
Cottonwood	11E2	5900	Mar. 21	31.0	8.8	11.5	11.9	9.9	89	4	G.N.F.	
Cottonwood (Upper)	11E1	8400	Mar. 21	31.7	10.2	12.1	11.6	10.6	97	4	G.N.F.	
Flashlight	12D3	6950	Apr. 2	18.9	5.7	4.2	6.7	5.5	103	4	G.N.F.	
Tobacco Root	12D2	6900	Mar. 20	33.7	10.4	11.4	13.3	11.5	91	4	G.N.F.	
Vigilante	11D1	6125	Mar. 21	NO	SNOW	3.3	0.0	0.8	80	4	G.F.	

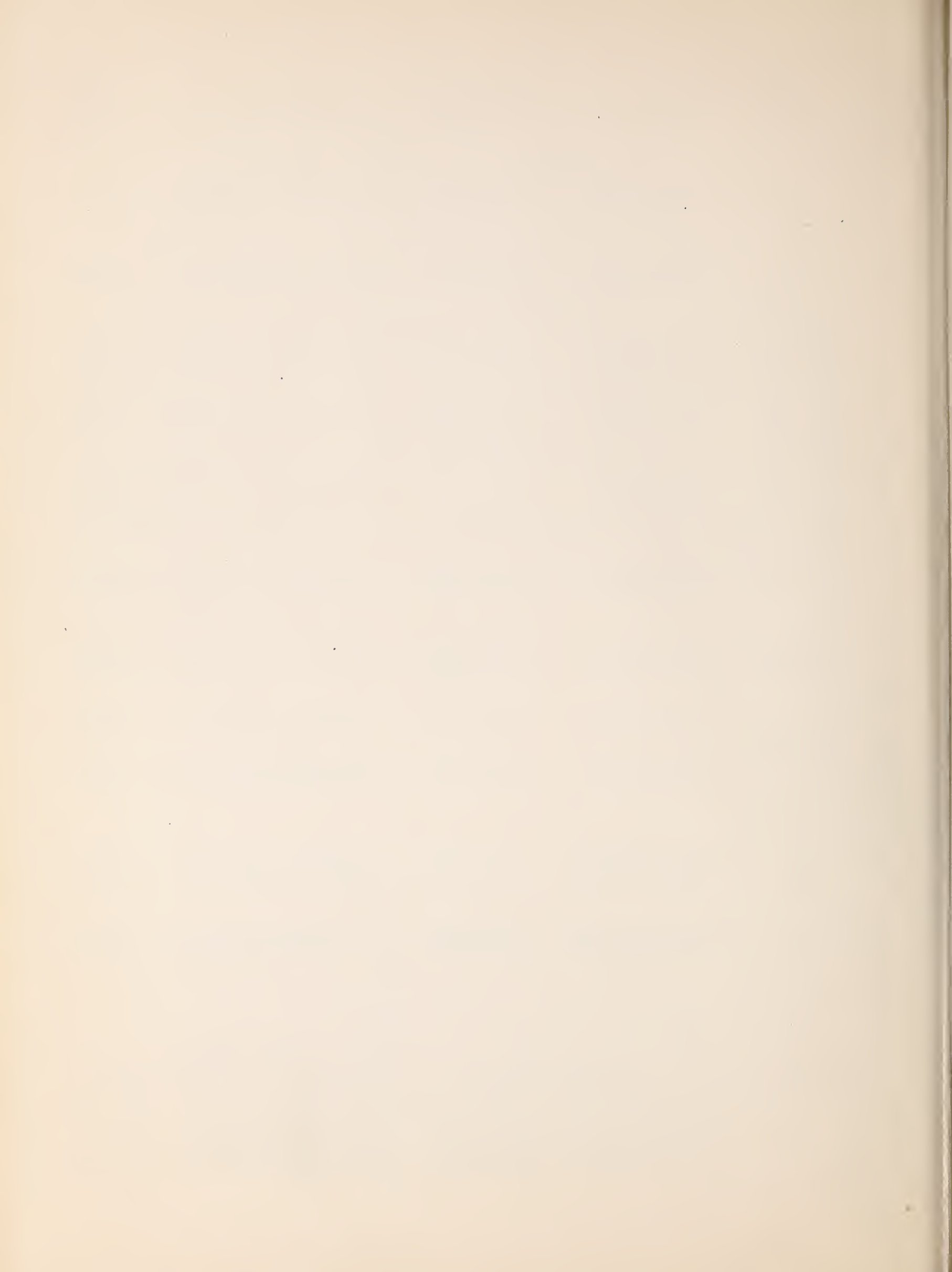
*Adjacent Basin

MONTANA SNOW SURVEYS, APRIL 1, 1951

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Apr. 1 1951	Water Content (Inches)			Average Data April 1		Years of Record	Ground Surface Condition
						Past Records		Avg.	%Avg.			
						1950	1949					
MADISON RIVER												
Hebgen	11E5	6550	Mar. 30	35.2	10.9	14.0	14.6	12.1	88	16	G.F.	
West Yellowstone	11E7	6700	Mar. 29	42.5	13.9	14.2	14.4	11.2	115	15	G.F.	
21-Mile	11E6	7150	Mar. 29	56.3	19.2	21.0	20.6	16.5	116	15	G.N.F.	
*Big Springs	11E9	6500	Mar. 28	62.0	22.4	25.9	27.8	20.5	109	16	--	
*Island Park	11E10	3600	Mar. 29	53.0	17.6	21.6	22.5	15.4	115	16	--	
*Valley View	11E8	6500	Mar. 29	48.0	14.9	19.5	18.8	14.6	109	16	--	
Norris Basin	10E2	7500										
GALLATIN RIVER												
Devil's Slide	10D4	8100	Mar. 31	62.1	19.9	20.2	21.0	18.8	100	13	G.F.	
Hood Meadow	10D3	6600	Mar. 31	31.1	9.4	7.3	10.9	8.4	112	13	G.F.	
Mystic Lake	10D2	6600	Apr. 4	25.6	8.1	8.4	10.7	7.5	108	15	G.N.F.	
New World	10D1	6700	Apr. 4	33.3	10.6	10.8	11.4	10.0	95	13	G.F.	
21-Mile	11E6	7150	Mar. 29	56.3	19.2	21.0	20.0	16.5	116	15	G.N.F.	
MISSOURI RIVER MAIN STEM												
Chessman Reservoir	12C5	6200	Mar. 30	15.4	4.6	4.4	7.6	4.6	100	16	--	
Crystal Lake	9C1	6100	Mar. 29	37.2	10.6	10.5	15.4	12.0	89	11	G.N.F.	
Grasshopper	10C2	7000	Apr. 3	13.0	14.0	5.8	8.1	5.1	78	14	--	
Kings Hill	10C1	7950	Mar. 29	45.8	13.7	17.1	16.9	13.2	104	13	--	
Picnic Grounds	13C6	6500	Mar. 31	81.6	5.6	2.6	7.6	4.2	113	7	--	
Pipestone Pass	12D1	7200	Apr. 1	28.0	6.8	4.2	7.9	5.7	120	13	--	
Stemple Pass	12C1	6900	Mar. 29	42.4	11.1	11.6	13.5	9.5	117	13	--	
Tennile, Lower	12C2	6250	Apr. 2	26.4	8.3	7.6	8.8	6.4	130	16	--	
Tennile, Middle	12C3	6800	Apr. 2	42.2	12.0	12.8	12.8	10.3	116	16	--	
Tennile, Upper	12C4	8000	Apr. 3	47.5	15.4	15.8	14.8	13.2	117	16	--	
(Teton River)												
Fright Creek	12A1	6000	Mar. 28	63.5	22.3	22.3	17.9	19.0	117	4	G.N.F.	
Waldron Creek	12B2	5600	Mar. 27	28.1	9.4	10.7	9.5	8.9	108	4	G.N.F.	
West Fork	12B1	6000	Mar. 27	61.3	21.0	24.6	19.9	19.8	106	4	G.N.F.	

*Adjacent Basin



MONTANA SNOW SURVEYS, APRIL 1, 1950

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Apr. 1 1951	Water Content (Inches)			Average Data April 1		Years of Record	Ground Surface Condition
						Past Records 1950	1949	Avg.	%Avg.			
(Sun River)												
Benchmark	12B8	5500	Mar. 26	34.0	12.3	12.8	12.0	11.6	106	4		
Cabin Creek	12B6	5400	Apr. 5	21.6	6.7	9.5	7.5	7.9	85	3		
5-Bull	12B9	5600	Mar. 26	27.1	9.2	9.2	8.8	9.0	102	4	G.N.F.	
Gates Park	12B5	5300	Apr. 5	37.9	11.5	13.1	11.7	12.1	95	3		
Goat Mountain	12B7	7000	Mar. 31	42.7	12.7	15.2	13.4	10.0	127	13		
My Lake	13B9	7300	Apr. 3	95.5	40.5	54.1				2		
Wrong Ridge	12B3	6800	Mar. 30	68.0	26.2	28.5	22.5	25.7	102	3		
Wrong Creek	12B4	5700	Mar. 29	51.0	17.3	20.0	15.7	17.8	97	3		
(Marias River)												
Marias Pass	12B5	5250	Mar. 29	66.8	24.5	28.7	21.4	17.5	146	16		
Snow Lab. #16	13A9	5200	Mar. 29	69.4	23.2	28.2	23.4	23.5	100	5		
(Milk River)												
Rocky Boy	9A1	5200	Apr. 1	12.8	3.8	5.1	6.7	5.5	69	10		
UPPER YELLOWSTONE												
Camp Senia	901	7890	Mar. 29	31.3	6.8	5.8	7.4	7.2	94	22		
Canyon	10E3	7750	Apr. 1	56.5	18.9	18.5	18.3	16.5	114	6		
Cooke City	10D7	7400	Mar. 31	32.8	9.2	8.4	10.6	7.6	121	15		
Crevice Mt.	10D5	8400	Apr. 1	34.0	9.5	9.4	13.0	9.8	97	17		
Independence	10D6	8000	Mar. 28	59.4	19.2	21.2	22.7	17.7	108	10	G.N.F.	
Lake Camp	10E4	7850	Mar. 31	41.2	11.7	19.6	15.2	9.3	126	16		
Lodgepole, Wyo.	9E1	8200	Apr. 1	44.9	15.8	--	14.8	10.9		14		
Lupine	10E1	7309	Apr. 2	36.6	10.8	11.7	14.2	9.8	110	13		
*Lewis Lake Divide	10E9	7000	Apr. 1	117.0	50.4	51.3	47.1	45.1	112	32		
*Astor Creek	10E8	7700	Apr. 1	97.0	39.0							
*Tom Thumb Summit	10E7	7900	Apr. 1	74.0	27.8	28.6	27.4	25.0	112	5		
(Shields River)												
Porcupine	10C3	9200	Mar. 27	19.3	5.8	5.7	9.1	4.7	123	13	G.F.	
(Musselshell River)												
Grasshopper	10C2	7000	Apr. 3	13.0	4.0	5.8	8.1	5.1	78	14		
*Adjacent Basin												

*Adjacent Basin



MONTANA SNOW SURVEYS APRIL 1, 1951

MISSOURI BASIN

	Date of Survey 1951	Snow Depth (In.) 1951	Apr. 1 1951	Water Content (Inches)			Average Data April 1 %Avg.	Years of Record	Ground Surface Condition
				Past Records		Avg.			
				1950	1949				
DRAINAGE BASIN AND SNOW COURSE **									
LOWER YELLOWSTONE (Wind River)									
Brooks Lake #3	Mar. 27	88.0	32.5	31.8	26.2	21.8	150	16	CS 100
Burrroughs Creek	Mar. 27	70.1	26.1	19.8	13.9	20.1	132	3	CS 100
Dinwoodie	Mar. 29	55.6	19.0	18.6	--	18.8	99	2	CS 100
Dry Creek	Mar. 29	34.5	9.7	10.5	--	10.1	96	2	CS 100
Du Noir	Mar. 28	44.8	13.7	13.4	10.3	11.9	115	11	CS 100
Geyser Creek	Mar. 28	41.9	12.8	11.3	10.1	11.4	112	3	CS 100
Hobbs Park	Mar. 25	61.5	20.9	27.7	22.8	23.8	88	3	CS 100
Little Warm	Mar. 28	73.1	24.3	22.1	17.0	21.1	116	3	CS 100
Mosquito Park	Mar. 25	31.2	9.5	14.3	10.4	10.5	90	7	CS 100
Sheridan	Mar. 27	37.8	11.2	7.7	8.6	6.6	185	16	CS 100
St. Lawrence	Apr. 2	29.4	7.6	10.5	9.6	8.1	94	8	CS 100
T-Cross Ranch	Apr. 2	36.3	13.1	7.7	7.3	7.2	182	11	CS 100
Trout Creek	Mar. 25	15.7	2.9	7.1	8.2	6.1	48	3	CS 100
*Togwotee Pass	Mar. 30	10.0	39.9	38.4	32.1	28.7	139	16	CS 100
*Kendall		7900							CS 100
*Loomis Park		8500							CS 100
*Black Rock	Mar. 30	79.0	30.2	28.9	23.6	21.6	140	16	CS 100
*Jellow Jacket	Mar. 27	38.0	9.8	--	8.2	6.5	150	14	CS 100
POPO AGIE RIVER									
Blue Ridge	Mar. 23	42.9	12.4	19.1	15.9	11.0	112	12	CS 100
Grannier Meadows	Mar. 23	45.8	13.3	24.3	17.5	13.5	99	15	CS 100
Larsen Creek	Mar. 24	49.7	13.9	22.8	--	18.4	75	2	CS 100
Sawmill Glade	Mar. 23	14.5	3.6	6.2	8.0	5.9	61	12	CS 100
South Pass	Mar. 23	49.0	14.8	23.7	17.6	13.5	110	12	CS 100

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Water Content (Inches)				Years of Record	Ground Surface Condition	
					Apr. 1 1951	Past Records		Average Data April 1			
						1950	1949				Avg.
BIGHORN RIVER (Wyoming)											
Beavers Mill	9F8	8000	Mar. 30	36.2	9.1	8.9	7.9	8.6	106	3	---
Owl Creek	8F1	8700	Mar. 31	32.6	7.3	6.2	6.6	6.7	109	3	---
Tensleep R. S.	7E3	8300	Mar. 31	28.9	7.2	8.4	3.5	6.9	104	15	---
Timber Creek	9E2	9000	Mar. 30	24.2	7.2	4.7	7.5	6.5	111	3	---
Ranger Creek	7E1	8800									---
Wood River	9E7	8000	Mar. 29	25.0	7.4	5.0	7.4	5.7	130	10	---
SHOSHONE RIVER											
East Entrance	10E6	7000	Mar. 30	44.2	14.8	11.3	17.6	14.6	101	3	---
Sylvan Pass	10E5	7100	Mar. 30	53.5	19.2	18.6	19.4	14.3	134	14	---
TONGUE RIVER											
Burgess Junction	7E4	7900	Apr. 4	44.3	15.8	12.0		13.9	114	2	---
Big Goose	7E2	7700	Apr. 4	15.3	3.8	2.5	5.3	4.3	89	16	---
Dome Lake	7E5	9000	Apr. 4	28.9	7.2	5.9		6.6	109	2	---
POWDER RIVER											
North Powder	7E8	8500	Mar. 26	28.6	6.8	--	--	--	--	1	---
Muddy Pass	7E7	9700	Apr. 2	31.0	8.1	--	--	--	--	2	---
Sour Dough	6F1	8500	Apr. 5	26.6	7.0	5.1	7.7	6.0	117	15	---
Soldier Park	7E6	8700	Apr. 4	24.7	5.8	4.6		5.2	--	2	---
CHEYENNE RIVER (South Dakota)											
Upper Speerfish	1 S.D.	6500	Apr. 1	15.8	3.5	7.9	10.8	6.6	53	8	---
Upper Castle	2 S.D.	6800	Apr. 1	22.5	4.2	8.8	9.1	5.2	81	8	---
Deerfield	3 S.D.	6000	Apr. 1	5.9	1.9	8.8	9.1	4.2	45	8	---



MONTANA SNOW SURVEYS APRIL 1, 1951

MISSOURI BASIN

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					Apr. 1 1951	Past Records				
						1950	1949			

COLUMBIA RIVER DRAINAGE IN MONTANA											
KOOTENAI										G. N. F.	
Baree Mountain	15B1	6000	Mar. 30	109.3	44.2	61.3	55.2	39.7	111	13	
Blue Bird Basin	14A1	6800	Mar. 28	120.2	45.3	46.8	38.2	35.5	128	13	
Brush Creek	14A4	5000	Apr. 1	36.7	11.6	13.9	19.0	12.0	96	7	
Fernie	Canada	3500	Mar. 29	34.5	11.6	14.9	7.7	7.8	149	15	
New Fernie	Canada	4100	Mar. 30	47.8	16.7	New	Course			1	
Ferguson	Canada	3000	Mar. 31	55.2	23.7	22.9	21.1	19.5	122	14	
Gerrard	Canada	6000	Apr. 3	64.1	17.3	15.2	12.5	14.5	119	17	
Gray Creek	Canada	5100	Mar. 29	68.3	23.0	24.0	20.5	21.8	105	4	
Kimberley	Canada	3800	Apr. 1	32.6	9.4	11.2	7.1	5.3	177	14	
Marble Canyon	Canada	5000	Mar. 30	64.5	22.0	15.7	13.0	15.0	146	5	
Nelson Creek	Canada	3050	Mar. 30	40.7	18.0	19.9	18.8	13.5	133	14	
Red Mountain Mont. 15A1	Canada	6000	Apr. 3	62.5	22.0	30.4	21.3	18.4	120	13	
Sandon	Canada	3500	Mar. 31	36.6	11.8	14.5	12.8	10.7	110	14	
Sinclair Pass	Canada	4500	Mar. 31	31.3	9.5	5.9	3.6	4.9	120	15	
Smith Creek	16A1	4800	Mar. 31	127.0	50.5	58.1	49.3	41.8	121	13	
Sullivan Mine	Canada	5100	Mar. 31	60.0	18.8	21.2	15.3	16.2	116	6	
Upper Elk River	Canada	4400	Mar. 31	37.0	10.9	10.6	7.5	9.5	115	4	



MONTANA SNOW SURVEYS, APRIL 1, 1951

COLUMBIA RIVER BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Water Content (Inches)			Years of Record	Ground Surface Condition	
					Apr. 1 1951	Past Records				
						1950	1949			Average Data April 1 %Avg.
FLATHEAD RIVER										
Big Creek	13B3	6750	Apr. 2	108.3	44.0	53.8	39.5	40.1	111	G.N.F.
Brush Creek	14A4	5000	Apr. 1	36.7	11.6	18.9	19.0	12.0	96	
Cattle Queen	13A1	4700	Mar. 31	98.3	37.5	45.2	33.5	30.3	124	
Desert Mountain	13A2	5600	Mar. 29	61.0	21.6	23.3	19.3	15.2	140	
Hell Roaring Divide	14A3	5700	Mar. 30	84.5	27.7	37.6	33.4	29.5	94	
Kishenehn	14A2	4300	Mar. 29	31.4	10.3	10.7	7.9	8.1	128	
Limestone Pass	13B8	7600	Apr. 1	121.8	51.1	54.7	46.3	48.9	105	
Logan Creek	14A5	4300	Apr. 2	29.2	8.6	10.3	12.5	8.0	108	
Marias Pass	13A5	5250	Mar. 29	66.8	24.5	28.7	21.4	17.5	146	
North Fork Jocko	13B7	6330	Mar. 31	114.6	45.8	56.3	40.0	39.6	118	
Rainy Lake	13B6	4300	Apr. 1	14.8	5.1	18.9	14.5	11.9	43	
Snow Lab. #16	13A9	5200	Mar. 29	69.4	23.2	28.2	23.4	23.5	99	
Spotted Bear Mt.	13B2	7000	Apr. 1	41.6	14.6	19.2	19.6	17.2	85	
Strawberry Lake	13B10	6500	Apr. 2	99.5	41.7	59.1	47.8	48.1	87	
Trinkus Lake	13B1	6500	Mar. 28	110.7	40.8	57.3	45.0	47.7	86	
Trout Lake	13B11	3600	Mar. 30	48.7	19.4	27.0	20.7	20.4	95	
Trout Lake #2	13A12	3600	Mar. 30	47.9	18.5	50.8	36.9	41.6	89	
Upper Holland Lake	13B5	7000	Mar. 29	100.7	37.0	New	Course			
Basin Creek	13B14	5000	Apr. 2	26.6	9.1	New	Course			
Holbrook	13B13	4530	Apr. 2	21.2	7.8	New	Course			
Quintonkon	13A13	3800	Apr. 1	41.9	15.7	New	Course			
Twin Creeks	13B11	3580	Apr. 1	25.0	9.5	New	Course			
UPPER CLARK FORK										
Chessman Res.	12C5	6200	Mar. 30	15.4	4.6	4.4	7.6	4.6	100	16
East Fork R. S.	13D1	5400	Mar. 29	30.6	9.2	7.6	10.8	5.1	178	13
El Dorado Mine	13C9	7800	Apr. 3	66.6	25.2	26.1	22.3	24.5	103	3
Game Pass		8100	Apr. 3	64.3	22.4	New	Course			1
Gold Creek Lake	13C8	7200	Apr. 3	53.9	21.2	20.4				2
Intergaard	13C4	6450	Mar. 31	29.6	8.5	8.0	12.7	8.3	103	7
North Fork Jocko	13B7	6330	Mar. 31	114.6	45.8	56.3	40.0	39.6	118	11
Pipestone Pass	12D1	7200	Apr. 1	28.0	6.8	4.2	7.9	5.7	120	13

G.N.F.

MONTANA SNOW SURVEYS, APRIL 1, 1951

COLUMBIA RIVER BASIN

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					Past Records 1950	1949	Avg. %Avg.			
								Apr. 1 1951	1950	
UPPER CLARK FORK (Continued)										
Rainy Lake	13B6	4200	Apr. 1	14.8	5.1	18.9	14.3	11.9	43	
Skalkaho Summit	13C3	7258	Apr. 1	82.9	34.4	26.3	36.2	25.0	138	
Slide Rock	13C2	7100								
Stemple Pass	13C1	6900	Mar. 29	42.4	11.1	11.6	13.5	9.5	117	
Storm Lake #2	12C7	7780	Mar. 30	48.0	15.6	16.7	16.0	14.3	109	G.N.F.
Stuart Mill	13C6	6500	Mar. 31	27.0	8.2	7.2	9.5	6.7	122	
Stuart Mount. #1	13C1	7400	Apr. 1	83.8	33.6	37.9	23.4	29.5	114	G.N.F.
Picnic Grounds	12C6	6500	Mar. 31	31.6	5.6	2.6	7.6	4.2	113	
Southern Cross	13C5	6500	Mar. 31	25.3	7.4	4.4	7.4	5.0	137	
Tennile, Lower	12C2	6250	Apr. 2	26.4	8.3	7.6	8.8	6.4	130	
Tennile, Middle	12C3	6800	Apr. 2	42.2	12.0	12.8	12.8	10.3	116	
Tennile, Upper	12C4	8000	Apr. 3	47.5	15.4	15.8	14.8	13.2	117	
*Lookout	13B2	5250	Mar. 30	102.0	36.3	47.5	48.7	32.7	118	
PEND OREILLE										
Bare Mt.	13B1	6000	Mar. 30	109.3	44.2	61.3	55.2	39.7	111	G.N.F.
Freezeout Summit #2	13C10	6800	Apr. 1	119.5	48.3	New	Location			
Hodoo Creek	13C1	6200	Apr. 1	135.5	56.6	70.0	59.5	46.4	122	
*Mosquito Ridge	16A4	5600	Apr. 1	94.0	37.2	50.0	44.5	34.5	108	
BITTERROOT										
East Fork R. S.	13D1	5400	Mar. 29	30.6	9.2	7.6	10.8	5.1	178	
Gibbons Pass	13D2	7100	Mar. 29	75.2	28.3	30.0	29.0	22.8	124	
Mud Creek Pasture	14C1	4500								
Nezperce Camp	14D2	5580	Apr. 2	44.8	15.2	16.0	20.8	13.0	117	
Nezperce Pass	14D1	6575	Apr. 2	55.8	20.0	20.0	24.0	17.2	117	
Skalkaho Summit	13C3	7258	Apr. 1	82.9	34.4	26.3	36.2	25.0	138	
Stuart Mt. #1	13C1	7400	Apr. 1	83.8	33.6	37.9	23.4	29.4	114	G.N.F.
Kit Carson	14D3	4700	Apr. 3	30.2	9.4	9.0	11.0	7.2	130	
Savage Pass	14C4	6000	Apr. 1	91.5	34.0	34.4	34.6	26.0	131	
Powell Pasture	15C3	3700	Apr. 1	45.6	15.7	20.4	20.5	13.3	118	
Packers Meadow	14C2	5700	Apr. 1	66.9	25.5	31.3	34.4	21.5	113	

* Adjacent Basin



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